

L Number	Hits	Search Text	DB	Time stamp
1	149177	starch	USPAT; US-PGPUB	2004/03/23 08:32
2	198350	hydrolysis hydrolyz\$4 hydrolysate	USPAT; US-PGPUB	2004/03/23 08:33
3	784229	acid acidic	USPAT; US-PGPUB	2004/03/23 08:33
4	885613	continuous	USPAT; US-PGPUB	2004/03/23 08:34
5	4385	(hydrolysis hydrolyz\$4 hydrolysate) same continuous	USPAT; US-PGPUB	2004/03/23 06:54
6	918	starch and (hydrolysis hydrolyz\$4 hydrolysate) and (acid acidic) and continuous and ((hydrolysis hydrolyz\$4 hydrolysate) same continuous)	USPAT; US-PGPUB	2004/03/23 06:55
7	503	(starch and (hydrolysis hydrolyz\$4 hydrolysate) and (acid acidic) and continuous and ((hydrolysis hydrolyz\$4 hydrolysate) same continuous)) and (starch same (hydrolysis hydrolyz\$4 hydrolysate)) @ad>=19980807	USPAT; US-PGPUB	2004/03/23 07:06
8	1177297	@ad>=19980807	USPAT; US-PGPUB	2004/03/23 07:06
9	361	((starch and (hydrolysis hydrolyz\$4 hydrolysate) and (acid acidic) and continuous and ((hydrolysis hydrolyz\$4 hydrolysate) same continuous)) and (starch same (hydrolysis hydrolyz\$4 hydrolysate))) not @ad>=19980807	USPAT; US-PGPUB	2004/03/23 08:32
10	57389	starch	EPO; JPO; DERWENT	2004/03/23 08:32
11	95223	hydrolysis hydrolyz\$4 hydrolysate	EPO; JPO; DERWENT	2004/03/23 08:33
12	1262938	acid acidic	EPO; JPO; DERWENT	2004/03/23 08:33
13	1618	starch and (hydrolysis hydrolyz\$4 hydrolysate ) and (acid acidic )	EPO; JPO; DERWENT	2004/03/23 08:33
14	865565	continuous reactor tubular	EPO; JPO; DERWENT	2004/03/23 08:34
15	57	(starch and (hydrolysis hydrolyz\$4 hydrolysate ) and (acid acidic )) and (continuous reactor tubular)	EPO; JPO; DERWENT	2004/03/23 08:34

L Number	Hits	Search Text	DB	Time stamp
1	227670	PLASMA DIALYSIS	USPAT; US-PGPUB	2004/03/23 10:01
2	149177	STARCH	USPAT; US-PGPUB	2004/03/23 10:01
3	910	(PLASMA DIALYSIS) SAME STARCH	USPAT; US-PGPUB	2004/03/23 10:02
4	101883	HYDROXYETHYL	USPAT; US-PGPUB	2004/03/23 10:02
5	330	(PLASMA DIALYSIS) AND STARCH AND ((PLASMA DIALYSIS) SAME STARCH) AND HYDROXYETHYL	USPAT; US-PGPUB	2004/03/23 10:02
6	9902	POLYDISPERS\$4	USPAT; US-PGPUB	2004/03/23 10:02
7	345519	MW (MOL ADJ WT) (MOLECULAR ADJ WEIGHT)	USPAT; US-PGPUB	2004/03/23 10:03
8	249	((PLASMA DIALYSIS) AND STARCH AND ((PLASMA DIALYSIS) SAME STARCH) AND HYDROXYETHYL ) AND (POLYDISPERS\$4 (MW (MOL ADJ WT) (MOLECULAR ADJ WEIGHT)))	USPAT; US-PGPUB	2004/03/23 10:04

09/485,377

FILE 'CAPLUS' ENTERED AT 08:41:00 ON 23 MAR 2004

	E SOMMERMEYER KLAUS/IN,AU
L1	91 S E2-4
	E HENNING KLAUS/IN,AU
L2	113 S E3-11
	E GORG MICHAEL/IN,AU
	E GOERG MICHAEL/IN,AU
L3	2 S E3-4
	E MAUL THOMAS/IN,AU
L4	1 S E3-4
L5	198 S L1 OR L2 OR L3 OR L4
L6	139538 S STARCH
L7	21 S L5 AND L6

L7 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2004:198158 CAPLUS  
 TITLE: Highly-branched, low substituted **starch** products for use as plasma expanders  
 INVENTOR(S): **Henning, Klaus**  
 PATENT ASSIGNEE(S): Fresenius Kabi Deutschland G.m.b.H., Germany  
 SOURCE: Ger. Offen., 5 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10237442	A1	20040311	DE 2002-10237442	20020816
WO 2004022602	A1	20040318	WO 2003-EP8411	20030730

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: DE 2002-10237442 A 20020816  
 AB The invention concerns modified hydroxyethyl and hydroxypropyl **starches** for clin. use as plasma expanders that have a branching degree of 8-20 mol%, a substitution degree (MS) of 0.05-0.3 and mol. weight of 10,000-450,000. The products are used in peritoneal dialysis. According to expts. with rats, the products deplete faster from liver, spleen, lung and kidney than conventional **starch** products.

L7 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2003:678846 CAPLUS  
 DOCUMENT NUMBER: 139:199011  
 TITLE: Manufacture of **starch** derivatives, **starch** conjugates with bioactive substances and their use as drugs  
 INVENTOR(S): **Sommermeyer, Klaus**  
 PATENT ASSIGNEE(S): Supramol Parenteral Colloids G.m.b.H., Germany  
 SOURCE: PCT Int. Appl., 30 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003070772	A1	20030828	WO 2003-EP1716	20030220

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10207072	A1	20030828	DE 2002-10207072	20020220
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PRIORITY APPLN. INFO.: DE 2002-10207072 A 20020220

OTHER SOURCE(S): MARPAT 139:199011

AB The **starch** derivs. QCONHZNHCOCH<sub>2</sub>X (I; Q = **starch** residue oxidized at reducing end to produce carboxy or lactone group; X = Br, iodine; Z = alkyl, aryl, aralkyl) are manufactured by reacting oxidized **starch** derivs., especially hydroxyethyl **starch**, with diamines H<sub>2</sub>NZNH<sub>2</sub> (Z as above) and coupling of intermediate amides QCONHZNH<sub>2</sub> (Q, Z as above) with haloacetic acids XCH<sub>2</sub>CO<sub>2</sub>H (X as above) in the presence of 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide (II). I are useful as carriers for bioactive substances containing SH groups, e.g., peptides,

proteins, antibiotics, nucleic acids or hormones (no examples). Thus, a solution of hydroxyethyl starch (average mol. weight  $M_w = 40,000$ ; substitution degree 0.2) in  $H_2O$  containing  $H_2NCH_2CH_2NH_2$  was treated with aqueous solution of  $BrCH_2CO_2H$  the pH of which was adjusted to 4.5 (0.01 N NaOH), the mixture was stirred and treated with II and the whole stirred for 2 h at pH 4.5 to give a title carrier.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:396597 CAPLUS

DOCUMENT NUMBER: 138:381715

TITLE: Use of polysaccharide-conjugated polyene macrolides in bacterial, animal and plant cell and tissue cultures as antimycotic agents

INVENTOR(S): Sommermeyer, Klaus

PATENT ASSIGNEE(S): Supramol Parenteral Colloids G.m.b.H., Germany

SOURCE: Ger. Offen., 4 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10155098	A1	20030522	DE 2001-10155098	20011109

PRIORITY APPLN. INFO.: DE 2001-10155098 20011109

AB The invention concerns the addition of polysaccharide-conjugated polyene macrolides to bacterial, animal and plant cell and tissue cultures as antimycotic agents; Amphotericin B, Nystatin or Natamycin are coupled via their free amino groups to the reduced carboxylic acid or lactone of oxidized polysaccharides, e.g. starch derivs. in order to increase solubility Hydroxypropyl starch and hydroxyethyl starch with mol. weight  $\leq 80$  kDa are used.

L7 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:170337 CAPLUS

DOCUMENT NUMBER: 138:206754

TITLE: Procedure for preparation of hydroxyethyl starch with hydrolytically adjusted molecular weight

INVENTOR(S): Sommermeyer, Klaus

PATENT ASSIGNEE(S): Supramol Parenteral Colloids G.m.b.H., Germany

SOURCE: Ger. Offen., 4 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10140594	A1	20030306	DE 2001-10140594	20010818

PRIORITY APPLN. INFO.: DE 2001-10140594 20010818

AB The title procedure comprises a first step, whereby during (acid) hydrolysis carried out in a batch reactor a polymer fraction of a mol. weight below the mol. weight desired is continuously extracted via a separation membrane using a corresponding cut off and a second step, whereby the further adjustment of the mol. weight by diafiltration using a membrane with a significant lower cut off is obtained, both leading to a close mol. weight distribution and higher yields. Thus, hydroxyethyl starch was prepared with yield 75%, mol. weight 131,000 and  $M_w/M_n$  1.8.

L7 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:93118 CAPLUS

DOCUMENT NUMBER: 138:139077

TITLE: Amphiphilic starch and hydroxyethyl starch conjugates

INVENTOR(S): Sommermeyer, Klaus

PATENT ASSIGNEE(S): Supramol Parenteral Colloids G.m.b.H., Germany

SOURCE: Ger. Offen., 4 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10135694	A1	20030206	DE 2001-10135694	20010721
PRIORITY APPLN. INFO.:			DE 2001-10135694	20010721
OTHER SOURCE(S): MARPAT 138:139077				

AB The title conjugates, useful for preparation of parenterally administered colloidal drug delivery systems, comprise lipophilic anchor groups selectively bound on the reducing end of polysaccharide chain. The reducing end group is activated by oxidation to lactone group and the lipophilic mol. is coupled via NH<sub>2</sub> group to the polysaccharide, e.g., by means of amidation or reductive amination. Thus, oxidation of hydroxyethyl starch (HES) (mol. weight 45,000 D) with 0.1 N iodine solution in H<sub>2</sub>O, in the presence of NaOH, gave a HES lactone which was dissolved in H<sub>2</sub>O and stirred overnight with H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>·HCl and 1-ethyl-3-(3-dimethylamino)propyl carbodiimide at pH 4.8. Stirring of the latter with cholesteryl chloroformate for 24 h in DMSO gave cholesteryl HES derivative which was dissolved in H<sub>2</sub>O and emulsified with parenteral fat emulsion (Lipovenoes 10%) by use of ultrasound to give storage-stable HES-coated parenteral emulsion.

L7 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:6000 CAPLUS  
 DOCUMENT NUMBER: 138:56190  
 TITLE: Synthesis of water-soluble antibiotic-polysaccharide conjugates for use with reduced toxicity  
 INVENTOR(S): Sommermeyer, Klaus  
 PATENT ASSIGNEE(S): Fresenius Kabi Deutschland GmbH, Germany  
 SOURCE: PCT Int. Appl., 24 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003000738	A2	20030103	WO 2002-EP6764	20020619
WO 2003000738	A3	20030828		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10129369	C1	20030306	DE 2001-10129369	20010621
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EP 1397162	A2	20040317	EP 2002-762293	20020619
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRIORITY APPLN. INFO.:			DE 2001-10129369 A	20010621
			WO 2002-EP6764	W 20020619

OTHER SOURCE(S): MARPAT 138:56190

AB The invention relates to novel pharmaceutical forms for amphotericin B, daunorubicin and doxorubicin, in which the known side effects (nephro- or cardiotoxicity) are reduced. The novel pharmaceutical forms are antibiotic-starch conjugates, wherein the antibiotic is combined with the polysaccharide at the reducing end thereof by means of a peptide bond formed between the reducing sugar and the antibiotic carbohydrate amine group. Thus, hydroxyethyl starch was oxidized using I<sub>2</sub>, and the oxidized starch coupled with amphotericin B to form a water-soluble derivative. In vitro tests showed that the conjugate was hydrolyzed by a suspension of erythrocytes to provide free amphotericin B.

L7 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:750515 CAPLUS  
 DOCUMENT NUMBER: 137:253095  
 TITLE: Hydroxyethyl starch conjugation of active substances in aqueous solution  
 INVENTOR(S): Sommermeyer, Klaus; Eichner, Wolfram; Frie, Sven; Lutterbeck, Katharina  
 PATENT ASSIGNEE(S): Fresenius Kabi Deutschland G.m.b.H., Germany  
 SOURCE: Ger. Offen., 22 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10112825	A1	20021002	DE 2001-10112825	20010316
WO 2002080979	A2	20021017	WO 2002-EP2928	20020315
WO 2002080979	A3	20030912		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1372735	A2	20040102	EP 2002-742858	20020315
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
NO 2003004095	A	20031104	NO 2003-4095	20030915
PRIORITY APPLN. INFO.: DE 2001-10112825 A 20010316				
WO 2002-EP2928 W 20020315				

AB The invention concerns the covalent conjugation of hydroxyethyl starch (HES) with active substances in aqueous solns., or in solns. that contain organic solvents and at least 10 % water. HES is first reduced to include an oxidative group for coupling to the NH<sub>2</sub> or COOH groups of the active substance. Coupling can include a linker substance as well. Active substances are coupled to HES to increase bioavailability; substances that can be coupled are hormones, peptides, lipids, steroids, enzymes etc.

L7 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1999:116661 CAPLUS  
DOCUMENT NUMBER: 130:169771  
TITLE: Method and apparatus for continuous preparation of hydrolyzed, optionally substituted starches and their use  
INVENTOR(S): Sommermeyer, Klaus; Henning, Klaus; Goerg, Michael; Maul, Thomas  
PATENT ASSIGNEE(S): Fresenius A.-G., Germany  
SOURCE: Ger., 6 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19744353	C1	19990211	DE 1997-19744353	19971008
WO 9907743	A1	19990218	WO 1998-EP5011	19980807
W: BR, CA, CN, MX, NO, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1001993	A1	20000524	EP 1998-946298	19980807
EP 1001993	B1	20011205		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
BR 9811881	A	20000822	BR 1998-11881	19980807
AT 210153	E	20011215	AT 1998-946298	19980807
PT 1001993	T	20020531	PT 1998-98946298	19980807
ES 2169554	T3	20020701	ES 1998-946298	19980807
CN 1126763	B	20031105	CN 1998-808022	19980807
NO 2000000636	A	20000208	NO 2000-636	20000208
PRIORITY APPLN. INFO.: DE 1997-19734370 A1 19970808				
DE 1997-19744353 A 19971008				
WO 1998-EP5011 W 19980807				

AB In the title process, which is economical and gives products with controlled properties, useful in medicine and in foods (no data), an aqueous suspension of starch is fed continuously by gravity, essentially without mixing, to the hydrolysis stage and hydrolysis is interrupted at the desired degree by neutralization. A block diagram of the process and apparatus is included.

L7 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 1998:548684 CAPLUS

DOCUMENT NUMBER: 129:150312  
 TITLE: The reaction of **starch** and ethylene oxide giving hydroxyethyl **starch** (HES) can be controlled by near infra-red spectroscopy (NIR)  
 AUTHOR(S): Hildebrand, Ulrich; Cech, Franz; **Sommermeyer, Klaus**  
 CORPORATE SOURCE: Fresenius A.-G., Friedberg, D-61169, Germany  
 SOURCE: Starch/Staerke (1998), 50(7), 306-309  
 CODEN: STARDD; ISSN: 0038-9056  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB The controlled parameter is the molar substitution (MS), which is measured by means of a probe directly from the neutralized and filtered reaction solution. According to the type of HES (200/0.5, 130/0.4, or 50/0.2) the measured MS depends on the concentration of HES in the solution. To prevent distorted results the content of HES 130/0.4 and HES 50/0.2 must be adjusted to 25% (w/v) for this individual calibration. Only in the case of HES 200/0.5 the concentration can vary between 19-29% for measuring the MS. NaCl as a byproduct of the process does not effect the measurement  $\leq 10\%$  NaCl in the sample. The temperature of the solution does not influence the result significantly (in the range of 20-34°). The reproducibility of the MS determination is good. The day-to-day standard deviation of 25 repetitions is  $\pm 0.005$  for a sample with MS = 0.405. Nevertheless the biggest problem for the determination of MS by NIR is ethylene glycol (EG), the most important byproduct of the reaction. If the concentration of EG differs significantly from that in the calibration samples, the calibration of the method must be revised.

L7 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:268328 CAPLUS  
 DOCUMENT NUMBER: 124:292796  
 TITLE: Process for manufacture of **starch** decomposition products  
 INVENTOR(S): **Sommermeyer, Klaus**; Goerg, Michael; Henning, Klaus  
 PATENT ASSIGNEE(S): Fresenius Ag, Germany  
 SOURCE: Ger. Offen., 6 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4434877	A1	19960404	DE 1994-4434877	19940929
IL 115301	A1	19991130	IL 1995-115301	19950914
CA 2201355	AA	19960404	CA 1995-2201355	19950926
WO 9610042	A1	19960404	WO 1995-EP3806	19950926
W: AU, BR, BY, CA, CN, CZ, EE, FI, HU, JP, KR, LT, MX, NO, NZ, PL, RO, SI, SK, UA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9537424	A1	19960419	AU 1995-37424	19950926
EP 783528	A1	19970716	EP 1995-935380	19950926
EP 783528	B1	19980812		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
CN 1161045	A	19971001	CN 1995-195412	19950926
CN 1081642	B	20020327		
BR 9509095	A	19980623	BR 1995-9095	19950926
JP 10506425	T2	19980623	JP 1995-511373	19950926
HU 77721	A2	19980728	HU 1998-753	19950926
HU 220079	B	20011028		
AT 169641	E	19980815	AT 1995-935380	19950926
ES 2122686	T3	19981216	ES 1995-935380	19950926
CZ 287694	B6	20010117	CZ 1997-949	19950926
SK 281858	B6	20010806	SK 1997-396	19950926
ZA 9508157	A	19960509	ZA 1995-8157	19950929
NO 9701323	A	19970321	NO 1997-1323	19970321
FI 9701293	A	19970401	FI 1997-1293	19970326
US 5945528	A	19990831	US 1997-809362	19970515

PRIORITY APPLN. INFO.: DE 1994-4434877 A 19940929  
 WO 1995-EP3806 W 19950926

AB The manufacture of **starch** (I) decomposition products in high yield with a narrow mol. weight distribution by treatment of I or I derivs. by high-pressure homogenization is described. Thus, partially decomposed wax maize I, with an average mol. weight of 2,689,000 Da, was reacted with ethylene oxide to give hydroxyethyl **starch** (II). A 15 weight% solution of II



in un-purified form was homogenized at 50-70° and 1600 bar for 10 times in a high-pressure homogenizer to give a product with a weight average mol. weight of .apprx.670,300 Da.

L7 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1993:59974 CAPLUS  
 DOCUMENT NUMBER: 118:59974  
 TITLE: Systematic GC/MS analysis of 1,2-O-ethylenegluco-  
 derivatives in hydrolyzates of hydroxyethyl  
 starch  
 AUTHOR(S): Hildebrand, Ulrich; Cech, Franz; Rupp, Daniela;  
 Sommermeyer, Klaus  
 CORPORATE SOURCE: Chem. Pharm. Forsch. Entwickl., Fresenius AG,  
 Oberursel, 6370, Germany  
 SOURCE: Starch/Staerke (1992), 44(11), 426-33  
 CODEN: STARDD; ISSN: 0038-9056  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB Sixteen 1,2-O-ethylene-D-glucose derivs. were identified in hydrolyzates of hydroxyethyl starch by gas chromatog.-mass spectrometry after persilylation. Besides the common MS fragments of silylated compds. four significant fragments of the bicyclic intramol. glucosidation products of monocyclic (2-O-hydroxyethyl)glucose derivs. were found: m/z 86, 127, 229 and 277. These ions allow identification of trimethylsilylated 1,2-O-ethylenegluco-derivs. in a complex mixture as well as the differentiation of isomers and anomers. The typical fragmentation pattern of trimethylsilyl-1,2-O-ethylenegluco-derivs. is described and is verified by the study of the corresponding acetyl derivs.

L7 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1992:658266 CAPLUS  
 DOCUMENT NUMBER: 117:258266  
 TITLE: Moistening composition for the oropharyngeal mucosa  
 containing hydroxyethyl starch  
 INVENTOR(S): Sommermeyer, Klaus; Mueller, Hans Joerg  
 PATENT ASSIGNEE(S): Fresenius AG, Germany  
 SOURCE: Ger. Offen., 3 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4113684	A1	19921029	DE 1991-4113684	19910426
PRIORITY APPLN. INFO.:			DE 1991-4113684	19910426

AB The title composition is useful as an artificial saliva for patients with defective saliva secretion, sialadenitis, etc. Use of hydroxyethylstarch to increase the viscosity eliminates the problem of formation of a film or coating on the mucosa which occurs with prior art compns. containing CM-cellulose. Thus, an oral spray contained H<sub>2</sub>O 40.696, K<sub>2</sub>HPO<sub>4</sub> 0.017, sorbic acid 0.025, BzONa 0.030, high-mol.-weight hydroxyethyl starch 4.092, sorbitol 1.523, KCl 0.061, NaCl 0.043, MgCl<sub>2</sub>·6H<sub>2</sub>O 0.003, CaCl<sub>2</sub>·2H<sub>2</sub>O 0.007, lemon essence 0.700, D-panthenol 2.538, and CO<sub>2</sub> (propellant) 1.015 g/spray dose.

L7 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1992:537593 CAPLUS  
 DOCUMENT NUMBER: 117:137593  
 TITLE: Fine structure and hyperfine structure of clinically  
 applied hydroxyethyl starch  
 AUTHOR(S): Sommermeyer, Klaus; Hildebrand, Ulrich;  
 Cech, Franz; Pfitzer, Edith; Henning, Klaus;  
 Weidler, Burghard  
 CORPORATE SOURCE: Fresenius AG, Oberursel, 6370, Germany  
 SOURCE: Starch/Staerke (1992), 44(5), 173-9  
 CODEN: STARDD; ISSN: 0038-9056  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB The Mark-Houwink-relations for different samples of clin. used hydroxyethyl starches were established by multi-detection HPGPC. In combination with the degree of branching, the degrees of substitution DS and the molar substitution MS for the different mol. regions were measured by gas chromatog. methylation anal. Within the mol. regions of nonreducing anhydroglucose units, branching units and linear units characteristic differences were found.. For hydroxyethyl starches which were prepared from enzymically hydrolyzed waxy corn starch

by  $\alpha$ -Amylase, a significantly higher degree of branching was found than for samples prepared by acid hydrolysis. The clin. relevance of these results is discussed.

L7 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1992:533830 CAPLUS  
 DOCUMENT NUMBER: 117:133830  
 TITLE: Manufacture of carbon molecular sieves  
 INVENTOR(S): Ziegler, Alois; Knoblauch, Karl; Henning, Klaus  
 Dirk; Degel, Josef; Wybrands, Klaus; Bongartz, Wolfgang  
 PATENT ASSIGNEE(S): Bergwerksverband G.m.b.H., Germany  
 SOURCE: Ger. Offen., 3 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4031580	A1	19920409	DE 1990-4031580	19901005
WO 9205868	A1	19920416	WO 1991-EP1796	19910920
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
EP 551297	A1	19930721	EP 1991-916073	19910920
EP 551297	B1	19940727		
R: BE, DE, GB, NL				
JP 05508107	T2	19931118	JP 1991-514919	19910920
JP 07072085	B4	19950802		
US 5248651	A	19930928	US 1992-859519	19920603
PRIORITY APPLN. INFO.:				
			DE 1990-4031580	19901005
			WO 1991-EP1796	19910920

AB Finely ground coal is oxidized in air in a fluidized bed, and then combined with a binder and water and shaped. The resulting granules are carbonized at  $<900^{\circ}$ , activated with water vapor at  $800-900^{\circ}$ , and then treated at  $750-850^{\circ}$  with cracked hydrocarbons. Starch is used as the binder, which is transformed to a gel with sulfamates. The sieves are used for separation of O and N.

L7 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1992:451188 CAPLUS  
 DOCUMENT NUMBER: 117:51188  
 TITLE: Chromatographic studies on the polydispersity of hydroxyethyl starch  
 AUTHOR(S): Sommermeyer, Klaus; Cech, Franz; Hildebrand, Ulrich; Pfitzer, Edith; Baumbach, Cornelia  
 CORPORATE SOURCE: Oberursel, Germany  
 SOURCE: Starch/Staerke (1992), 44(6), 215-18  
 CODEN: STARDD; ISSN: 0038-9056  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German

AB A representative sample of clin. used hydroxyethyl starch was separated by semipreparative high-pressure gel permeation chromatog. (HPGPC) into narrow fractions in the range of approx. 3000 to 800,000. The original sample and selected fractions were characterized by gas chromatog. methylation anal. according to their substitution degrees MS and DS, which were differentiated by the substitution positions at C2, C3 and C6 of the anhydroglucoses and their kind of glycosidic bonding  $\alpha$ -1,  $\alpha$ -1, 4 or  $\alpha$ -1,4,6, resp. Furthermore, polydispersity in relations to the degree of branching was determined Mark-Houwink and mol.-weight distribution parameters determined by multi-detection HPGPC are reported. The presented data demonstrated an extensive homogeneity of the original sample. The clin. relevance is discussed.

L7 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1992:176417 CAPLUS  
 DOCUMENT NUMBER: 116:176417  
 TITLE: Characterization of polymers by size exclusion chromatography using multiple detection. Investigations on the determination of structural differences of hydroxyethyl starches  
 AUTHOR(S): Sommermeyer, K.; Cech, F.; Pfitzer, E.; Roessler, K.  
 CORPORATE SOURCE: Pharm. Div., Fresenius A.-G., Oberursel/Taunus, 6370, Germany  
 SOURCE: Chromatographia (1992), 33(3-4), 151-3  
 CODEN: CHRGB7; ISSN: 0009-5893

DOCUMENT TYPE: Journal  
LANGUAGE: English

AB An aqueous size-exclusion chromatog. system was outlined using dual detection by a multi-angle laser light scattering photometer and a concentration detector. The differences in the radii of gyration at the same mol. weight of two hydroxyethyl **starches** with different mol. structure were presented. The determination of the Mark-Houwink relation for these polymers led to a qual. similar result.

L7 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:464034 CAPLUS  
DOCUMENT NUMBER: 115:64034  
TITLE: Pharmacokinetic parameters as criteria for clinical use of hydroxyethyl **starch** preparations

AUTHOR(S): Weidler, B.; Von Bormann, B.; **Sommermeyer, K.**  
; Lohmann, E.; Peil, J.; Hempelmann, G.

CORPORATE SOURCE: Abt. Anaesthesiol. Oper. Intensivmed.,  
Justus-Liebig-Univ., Giessen, W-6300, Germany

SOURCE: Arzneimittel-Forschung (1991), 41(5), 494-8  
CODEN: ARZNAD; ISSN: 0004-4172

DOCUMENT TYPE: Journal  
LANGUAGE: German

AB The pharmacokinetics of 2 com. hydroxyethyl **starch** prepns., differing only slightly in their pharmaceutical descriptions, were determined in volunteers. Significant differences were found, related not only to the degree of substitution but also to the position of the hydroxyethyl groups on the anhydroglucose skeleton. The C2/C6 hydroxyethylation ratio seemed to be the most significant for determining whether the **starch** would be slow- or long-acting when used for plasma replacement/hemodiln. Such data should be included in the pharmaceutical specifications for hydroxyethyl **starch**, because the differences may determine clin. use and efficacy.

L7 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:435717 CAPLUS  
DOCUMENT NUMBER: 115:35717  
TITLE: Pharmaceutical formulations containing nonhygroscopic carnitine mandelate

INVENTOR(S): **Sommermeyer, Klaus**; Henning, Klaus

PATENT ASSIGNEE(S): Fresenius A.-G., Germany

SOURCE: Ger. Offen., 3 pp.  
CODEN: GWXXBX

DOCUMENT TYPE: Patent  
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3841664	A1	19901011	DE 1988-3841664	19881210
PRIORITY APPLN. INFO.: DE 1988-3841664 19881210				
AB L-Carnitine D-(-)-mandelate (I) is a nonhygroscopic carnitine salt usable in drug formulations. I was prepared by lyophilizing a solution of 8 g L-carnitine and 7.64 g D-(-)-mandelic acid in 40 mL water. Tablets comprised I 250, <b>starch</b> 40, talc 15, and Mg stearate 5 mg.				

L7 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1991:124846 CAPLUS  
DOCUMENT NUMBER: 114:124846  
TITLE: Hydroxyethyl **starch** as plasma expander and its preparation

INVENTOR(S): **Sommermeyer, Klaus**; Cech, Franz; Weidler, Burghard; Henning, Klaus

PATENT ASSIGNEE(S): Fresenius A.-G., Germany

SOURCE: Eur. Pat. Appl., 6 pp.  
CODEN: EPXXDW

DOCUMENT TYPE: Patent  
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 402724	A1	19901219	EP 1990-110531	19900602
EP 402724	B1	19960214		
EP 402724	B2	20010509		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
DE 3919729	A1	19901220	DE 1989-3919729	19890616

DE 3919729	C2	19920326		
DE 3919729	C3	19970619		
AT 134196	E	19960215	AT 1990-110531	19900602
ES 2082800	T3	19960401	ES 1990-110531	19900602
US 5218108	A	19930608	US 1990-533294	19900605
JP 03026701	A2	19910205	JP 1990-156633	19900614

PRIORITY APPLN. INFO.: DE 1989-3919729 A 19890616

AB Hydroxyethyl starch (I) which is degraded in a physiol. reasonable time with no residues is prepared by prehydrolysis of amylopectin-rich starch, hydroxyethylation to degree of substitution (DS) 0.15-0.5, and hydrolysis to mol. weight (6-60) + 104, giving I with ratio of C-2 substitution to C-6 substitution 8-20:1. Starch was washed and partially acetalized with MeOH, solvated with 1% methanolic HCl at 40° until the mol. weight was 900,000, washed with 0.1 N NaOH, hydroxyethylated in 1 N NaOH at 20° and pH ≥12, with 2-chloroethanol (0.77 mol/2.58 mol starch), hydrolyzed with HCl, and subjected to ultrafiltration to give I with mol. weight 234,000 and D.S. 0.26. Complete hydrolysis gave glucose 81.2%, 2-, 3-, and 6-hydroxyethyl glucose 12.42, 2.70, and 1.33%, resp., and bis(hydroxyethyl) glucose isomers 1.04%.

L7 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:101348 CAPLUS  
 DOCUMENT NUMBER: 108:101348  
 TITLE: Use of tryptophan-containing oligopeptides for treatment of cerebral disorders  
 INVENTOR(S): Sommermeyer, Klaus; Weidler, Burghard  
 PATENT ASSIGNEE(S): Fresenius A.-G., Fed. Rep. Ger.  
 SOURCE: Ger. Offen., 6 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3601398	A1	19870723	DE 1986-3601398	19860118
EP 234186	A1	19870902	EP 1987-100072	19870106
EP 234186	B1	19911106		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 69163	E	19911115	AT 1987-100072	19870106
ES 2038603	T3	19930801	ES 1987-100072	19870106
US 4849408	A	19890718	US 1987-1517	19870107
JP 62169730	A2	19870725	JP 1987-4217	19870113

PRIORITY APPLN. INFO.: DE 1986-3601398 19860118  
 EP 1987-100072 19870106

AB Oligopeptides containing ≥1 L-tryptophan or L-tryptophan-derived amino acid are used for treatment of cerebral disorders, especially insomnia and depression. Tablets were manufactured to contain L-Ala-L-Trp 1500, corn starch 100, alginic acid 10, and Me stearate 10 parts, all ingredients except the Mg stearate being mixed with aqueous 15% corn starch paste and granulated and sieved before the Mg stearate addition and tablet pressing.

L7 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1982:168750 CAPLUS  
 DOCUMENT NUMBER: 96:168750  
 TITLE: Blood substitute containing hemoglobin  
 INVENTOR(S): Pitz, Heiner; Sommermeyer, Klaus  
 PATENT ASSIGNEE(S): Fresenius, Dr. Eduard, Chemischpharmazeutische Industrie K.-G., Fed. Rep. Ger.  
 SOURCE: Ger. Offen., 26 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3029307	A1	19820304	DE 1980-3029307	19800801
DE 3029307	C2	19891207		

PRIORITY APPLN. INFO.: DE 1980-3029307 19800801

AB A blood substitute consists of cell-free Hb bound to a polysaccharide by way of reactive groups and a bridging ligand. The polysaccharide is preferably dextran or hydroxyethyl starch with a mol. weight of 10,000-500,000. The bridge is a C3-14 unsatd. aliphatic or C14 or less

cycloalkyl or aryl group. Thus, dextran or hydroxyethyl starch was oxidized with  $\text{NaIO}_4$ , dialyzed, and treated with 2M ethylenediamine at pH 5, stirred for 6-10 h, mixed with tris(hydroxymethyl)methyl-2-aminoethanesulfonic acid to block excess aldehyde groups, dialyzed, adjusted to pH 7.5 and a phosphate concentration of 0.5M with solid  $\text{KH}_2\text{PO}_4$  and  $\text{Na}_2\text{HPO}_4$ , and stirred with 25% aqueous glutardialdehyde for 18 h at  $37^\circ$ , followed by dialysis to remove the excess. The solution was treated with human Hb in pH 9.5 0.2M bicarbonate buffer at  $5^\circ$ , filtered, ultrafiltered, and freeze-dried.